

# ABSTRACT OF THE DISCLOSURE

An apparatus for detecting chemical substances which is high in sensitivity and selectivity is provided.

5           An organic acid or an organic acid salt is used to generate an organic acid gas from an organic acid gas generator 3 to be mixed with a sample gas for introduction into an ion source 4 for ionization, thereby obtaining a mass spectrum by a mass analysis  
10           region 5. A data processor 6 determines the detection or non-detection of a specific  $m/z$  of an organic acid adduct ion obtained by adding a molecule generated from the organic acid to a molecule with specific  $m/z$  generated from a target chemical substance to be  
15           detected based on the obtained mass spectrum. When there is an ion peak with the  $m/z$  of the organic acid adduct ion, the presence of the target chemical substance to be detected is determined, and an alarm is sounded.

20           False detection can be prevented.